Heat-Related Illness

Health Education Facts

Body heat is brought to the skin surface largely by the bloodstream. When the surrounding air is humid, cooling becomes more difficult. On a day when the temperature is 95-100EF with high humidity and little or no breeze, heat will have a hard time leaving the body.

It is on such a day, or several days like this in a row (a heat wave), that medical emergencies due to heat are likely to happen. People who work in hot environments like factories, kitchens, etc. are also at greater risk.

A person with symptoms including headache, nausea, and fatigue after exposure to heat probably has some measure of a heat-related illness. It is important to recognize the difference between the very serious condition known as heat stroke and other heat-related illnesses. Persons experiencing any of these symptoms should consult a doctor.

There are three main types of heat-related illness: heat cramps, heat exhaustion, and heat stroke.

Heat cramps

Heat cramps are painful muscle spasms in the abdomen, arms, or legs following strenuous activity. The skin is usually moist and cool and the pulse is normal or slightly raised. Body temperature is generally normal. Heat cramps often are caused by a lack of salt in the body, but salt replacement should not be considered without advice from a physician.

Heat cramps usually affect people who work in hot environments and sweat a great deal. Loss of salt from the body causes very painful cramps in leg and stomach muscles. Heat cramps may also come from drinking iced water or other drinks too quickly or in too large a quantity. The symptoms of heat cramps are as follows:

- Muscle cramps in legs and stomach
- Dizziness
- Heavy sweating

To provide emergency care for heat cramps, move the victim to a cool place. Give him sips of water. Massage the cramped muscles. Take the victim to a hospital if there are signs of a more serious problem (see below).

Heat exhaustion

Heat exhaustion is a warning that the body is getting too hot. The person may be thirsty, giddy, weak, uncoordinated, nauseous, and sweating profusely. The body temperature is usually normal and the pulse is normal or raised. The skin is cold and clammy. Although heat exhaustion often is caused by the body's loss of water and salt, salt supplements should only be taken with advice from a doctor.

Body heat, which has been transported from the interior of the body to the surface by the blood, may dilate skin vessels. If the skin vessels dilate, large amounts of blood may pool in the lower half of the body, especially the legs. When this happens the blood does not return adequately to the heart and a physical collapse may occur. The symptoms of heat exhaustion are as follows:

- Weak pulse
- Rapid and usually shallow breathing
- Generalized weakness
- Pale, clammy skin
- Profuse sweating
- Dizziness
- Unconsciousness

To provide emergency care for heat exhaustion, remove the victim to a cool place and remove as much clothing as possible. Give sips of water. Fan the victim, but do not allow chilling or overcooling. Take the victim to a medical facility if there are signs of a more serious problem. Heat exhaustion victims often also suffer heat cramps.

Get the victim out of the sun and into a cool place, preferably one that is air-conditioned. Offer fluids but avoid alcohol and caffeine. Water and fruit and vegetable juices are best. Encourage the individual to shower or bathe, or sponge off with cool water. Urge the person to lie down and rest, preferably in a cool place.

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Heat stroke

Heat stroke happens when there is a problem with the body's ability to regulate heat. Heat stroke can result in convulsions, unconsciousness, and even death. Immediate medical attention is essential when problems first begin. Many people die of heat stroke each year; most are over 50 years of age. Infants, the elderly, and alcoholics are extremely susceptible.

A person with heat stroke has a body temperature above 104EF. Other symptoms may include confusion, combativeness, bizarre behavior, faintness, staggering, strong rapid pulse, dry flushed skin, lack of sweating, possible delirium or coma.

Direct exposure to the sun, poor air circulation, and poor physical condition contribute to heat stroke. The symptoms of heat stroke are as follows:

- C Sudden onset
- C Dry, hot, and red skin--as a rule persons with heat stroke do not sweat (however, some may sweat heavily)
- C Dilated pupils
- C A pounding, fast pulse
- C Deep breathing followed by a shallow, almost absent breath
- C Muscle twitching that may turn into convulsions
- C Body temperature reaching 105EF or higher
- C Loss of consciousness

Take the victim to a hospital immediately or call an ambulance. Move the heat stroke victim to a cool environment and remove as much clothing as possible. Make sure the victim can breathe freely. Reduce body temperature by drenching him or her with water or (preferably) by wrapping the victim in a wet sheet. If cold packs are available, place them under the arms, around the neck, in the groin, and at the ankles--do not cool to the point of shivering. If the victim goes into convulsions, ease him or her to the ground and away from any objects the victim might hit during a convulsion.

How can heat-related illness be prevented?

Drink plenty of liquids, even if not thirsty. Dress in lightweight, light-colored, loose-fitting clothing. Avoid the midday heat and do not engage in vigorous activity during the hottest part of the day (noon - 4 p.m.). Wear a hat or use an umbrella for shade.

If possible, use air conditioners liberally or try to visit air-conditioned places such as libraries, shopping malls, and theaters. For an air conditioner to be beneficial it should be set below 80EF. If not used to the heat, get accustomed to it slowly by exposing yourself to it briefly at first and increasing the time little by little.

Avoid hot, heavy meals. Do a minimum of cooking and use an oven only when absolutely necessary.

Ask your physician whether you are at particular risk because of medication.

What health conditions and risk factors should be watched for?

Health conditions contributing to heat-related illness include:

- C Poor circulation, inefficient sweat glands, and changes in the skin caused by the normal aging process. Heart, lung, and kidney diseases, as well as any illness that causes general weakness or fever.
- C High blood pressure or other conditions that require changes in diet. For example, people on salt-restricted diets may increase their risk. However, salt pills should not be used without first asking a doctor.
- C The inability to perspire, caused by medications including diuretics, sedatives and tranquilizers, and certain heart and blood pressure drugs.
- C Taking several drugs for various conditions. It is important, however, to continue to take prescribed medication and discuss possible problems with a physician.
- C Being substantially overweight or underweight.
- C Drinking alcoholic beverages.

Lifestyle risk factors which increase the chance for heat-related illness are:

- C Unbearably hot living quarters. People who live in homes without fans or air conditioners should take the following steps to reduce heat discomfort: open windows at night; create cross-ventilation by opening windows on two sides of the building; cover windows when they are exposed to direct sunlight; and keep curtains, shades, or blinds drawn during the hottest part of the day.
- C Lack of transportation. Friends or relatives might be asked to supply transportation on particularly hot days. Many communities, area agencies, religious groups, and senior citizen centers provide such services.
- C Overdressing. Because they may not feel the heat, older people may not dress appropriately in hot weather. Perhaps a friend or family member can help to select proper clothing. Natural fabrics such as cotton are best.
- C Visiting overcrowded places. Trips should be scheduled during non-rush hour times and participation in special events should be carefully planned.
- C Not understanding weather conditions. Older people, particularly those at special risk, should stay indoors on especially hot and humid days.